



**UNITED STATES MARINE CORPS**  
MARINE CORPS AIR STATION  
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AIR STATION ORDER 5100.1

From: Commanding General, Marine Corps Air Station Cherry Point  
To: Distribution List

Subj: COMMAND ERGONOMICS INJURY PREVENTION PROGRAM

Ref: (a) DoDINST 6055.1, Department of Defense Occupational  
Safety and Health Program NOTAL  
(b) SECNAVINST 5100.10H I&E  
(c) OPNAV 5100.23F

Encl: (1) MCAS Cherry Point Ergonomics Program  
(2) Definitions

1. Situation. The Secretary of Defense, Chief of Naval Operations and the Commandant of the Marine Corps set a goal of achieving a 50% reduction in work related-injuries and worker's compensation payments within DoD and the United States Marine Corps.

2. Mission. MCAS Cherry Point shall significantly reduce work related injuries and compensation costs through preemptive ergonomic injury prevention training, media, and workspace designs.

3. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent. The Department of Safety and Standardization will establish a comprehensive Ergonomics Injury Prevention Program (EIPP) for Marine Corps Air Station (MCAS) Cherry Point. The purpose of this program is to reduce work related injuries and worker's compensation payments through ergonomic injury prevention training, media, and workspace designs.

(2) Concept of Operations. This Order delineates guidance required for the effective execution of a EIPP. Participation in this program will be at the widest extent possible. All directorates shall participate in the EIPP program and will designate a representative to the Ergonomics Committee (EC). The EC will work command ergonomic issues and

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prioritize emerging and special ergonomic needs. This process will be funded by the fenced portion of the PSE funds, which are administered by the Facilities Directorate. Enclosure (1) establishes the elements of an Ergonomics Program and enclosure (2) provides definitions of key terms.

b. Tasks

(1) All Directors/Department Heads and Commanding Officers of H&HS and VMR-1. Designate, in writing, a representative to the CEC. Ensure that the CEIP Coordinator (CEIPC) approves all furniture and equipment purchases.

(2) Director of Safety and Standardization. Establish a comprehensive CEIPP. Designate a CEIPC, monitor the activities of the CEC, and ensure that the Commanding General is advised on ergonomic issues as they develop.

(3) EEIPC. Serve as Chairperson of the CEC. Ensure that the CEC meets quarterly and distributes the minutes of those meetings. On a quarterly basis, report the projection of emerging ergonomic equipment needs to the Director of Facilities or appointed representative. Participate in the annual PSE budget submission process. Review workspace designs and participate in the approval process.

(4) Representatives. Attend and participate in the quarterly meetings. Duties include, but are not limited to, working on emerging ergonomic issues, approving ergonomic furnishings and equipment, participating in the prioritization of furniture and equipment needs, and identifying projected equipment needs. Conduct other ergonomic related duties at the direction of the CEIPC.

(5) Assistant Chief of Staff, G-4 Facilities. Managed equipment planning and programming and administer the PSE process. Coordinate with the EIPP on the purchase of ergonomic furniture and equipment to meet requirements. Coordinate with the EC to ensure that workspace design is consistent with accepted ergonomic practices to control exposure to injury. Coordinate with the EC to ensure that procured furniture and equipment are consistent with accepted ergonomics practices.

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(6) Assistant Chief of Staff, G-6 Telecommunications and Information Systems Directorate. Provide computer software or hardware necessary to support the EIPP. Provide technical assistance in employing the Cherry Point Intranet to meet ergonomic goals of the EC.

(7) Comptroller. Coordinate with Safety, G-4 Facilities, and G-6 TISD to ensure requirements for ergonomic furniture and equipment are identified for funding through the planning, programming, and budgeting process.

(8) Director of Supply. Procure ergonomic equipment with a value exceeding \$2500 that has been approved by the CEC. This equipment will be procured in accordance with the Federal Acquisition Regulations and its supplements.

c. Coordinating Instructions. All requests for furniture and equipment shall be submitted to the Facilities Directorate CEC representative who will, in turn, coordinate with the CEC on the purchase of ergonomic furniture and equipment and approval of workspace design.

4. Administration and Logistics. None.

5. Command and Signal

a. Signal. This Order is effective the date signed.

b. Command. This Order is applicable to Marine Corps Air Station Cherry Point.

A handwritten signature in black ink, appearing to read 'PJ Pisano'.

PAUL J. PISANO  
Chief of Staff

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### MCAS Cherry Point Ergonomics Program

1. Purpose. This enclosure establishes the elements of an Ergonomics Program. The Ergonomics Program seeks to prevent injuries and illnesses by identifying, evaluating, and controlling ergonomic hazards within the workplace.

### 2. Discussion

a. Work-Related Musculoskeletal Disorders (WMSDs) are musculoskeletal disorders caused or made worse by the work environment. WMSDs can cause severe and debilitating symptoms such as pain, numbness, and tingling; reduced worker productivity; lost time from work; temporary or permanent disability; inability to perform job tasks; and an increase in workers compensation costs. Musculoskeletal disorders are often confused with ergonomics. Ergonomics are the science of fitting workplace conditions and job demands to the capabilities of workers. In other words, musculoskeletal disorders are the problem and ergonomics is a solution. Therefore, ergonomics seeks to adapt the job and workplace to personnel by evaluating tasks, tooling, and equipment and ensuring that workplace design and equipment are within the capabilities and limitations of personnel.

b. Musculoskeletal disorders of any cause are among the most prevalent medical problems, affecting 7% of the population and accounting for 14% of physician visits and 19% of hospital stays. When looking specifically at **work-related** musculoskeletal disorders, the Bureau of Labor Statistics (BLS) reports that in 1995, 62% (308,000) of all illness cases were due to disorders associated with repeated trauma. This figure **does not include** back injuries. BLS also reports that the number of cases of repeated trauma has increased significantly, rising from 23,800 cases in 1972 to 332,000 cases in 1994 – a 14% increase. In 1995 the number of cases decreased by 7% to 308,000 reported cases, but this number still exceeds the number of cases in any year prior to 1994. When looking specifically at cases involving days away from work, BLS reports that in 1994 approximately 32% or 705,800 cases were the result of overexertion or repetitive motion. This figure **includes** back injuries.

### 3. Responsibilities

#### a. Safety and Standardization Department

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- (1) Administratively direct the Ergonomics Program.
- (2) Identify existing and potential work-related musculoskeletal risks.
- (3) Investigate all cases of WMSDs.
- (4) Conduct worksite evaluations to eliminate sources of potential WMSDs.
- (5) Ensure corrective action plans are implemented.

b. Command Ergonomics Committee (CEC)

- (1) Serve as a focal point for the Command Ergonomics Program.
- (2) Develop and implement the Command plan.
- (3) Review injury and illness records related to WMSDs, develop trend analyses, and report the results to the Occupational Safety & Health manager.
- (4) Set priorities for identified WMD risks for abatement.
- (5) Develop methods to evaluate the effectiveness of corrective actions and document results.
- (6) Audit and maintain documentation on annual surveys, trend analyses, investigations, testing of new tooling and equipment, ergonomics improvements, associated costs, and implementation status of the ergonomic plan.
- (7) Provide ergonomics training and education for personnel.
- (8) Ensure newly appointed supervisors, managers, and employees receive appropriate ergonomics training.
- (9) Ensure annual training is administered to all employees and documentation of the training is maintained.

c. Facilities Directorate

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(1) Integrate ergonomic considerations into all workplace improvements, designs for facility modifications, and construction.

(2) Implement ergonomics recommendations to eliminate or reduce WMSDs.

(3) Ensure ergonomic considerations have been given to all equipment purchased, (e.g., furniture, tools, workstations, and material handling devices).

d. G-1 Manpower and Personnel

(1) Provide the CEC information on compensation claims and costs, for work center locations associated with WMSDs to enable the CEC to perform accurate trend analyses of WMSDs.

(2) Use local medical facility personnel recommendations in the assignment of injured workers to light or restricted duty.

e. Department Heads, Managers, and Supervisors

(1) Ensure personnel receive ergonomics awareness training.

(2) Assist the CEC in the implementation of the CEC ergonomic recommendation projects.

(3) Request assistance from the CEC for recognizing, assessing, and monitoring WMSD exposure.

(4) Report to CEC suspected hazardous tools/equipment or operations related to WMSDs whenever WMSDs risks are identified or employee complaints are voiced.

(5) Once approved ergonomics accommodations have been established, they shall be transferred with that employee to the new workstation if feasible.

(6) Report all recognized WMSD symptoms of military personnel to the Naval Hospital and of their civilian personnel to the Naval Hospital Occupational Health Clinic (OHC).

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f. Personnel

- (1) Report for scheduled ergonomics training.
- (2) Request supervisory assistance when identifying potential WMSD exposures.
- (3) Report unsafe work conditions to supervisors.
- (4) Provide knowledge and feedback on any proposed or implemented process changes.
- (5) Recognize the early symptoms and causes of WMSDs and report them to the supervisor.

4. Requirements. MCAS Cherry Point is an administrative and industrial setting with program commitments to support military personnel and their dependents and civilian personnel as a diversified workforce. The Ergonomics Program is designed to integrate those commitments and the personnel needs into a viable working program. The following requirements, as a minimum, will be implemented and maintained to meet program requirements.

a. Ergonomic Risk Identification and Analysis

(1) Review of injury and associated data. A review of the injury-mishap logs, federal compensation claims, worker complaints, Industrial Hygienist surveys and safety inspections is a main element of conducting ergonomic analyses. Special emphasis will be placed on the evaluation of WMSDs. Information to be obtained will include the body part involved, nature of the injury/illness, lost work time (workdays and light duty days), and medical and compensation costs. Where mishap and compensation data reveal a trend for WMSDs, tasks will be prioritized for detailed analysis based on incidence rate, severity of the risk, and depth of support needed.

(2) Workplace Analysis. Job Safety Analysis requires observation of an employee performing the task to be studied. This type of analysis will provide critical task information on the work environment, procedures, tooling, equipment, basic safety

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elements, employee actions as well as task-associated discomfort. Detailed analyses will characterize risk factors, abatement recommendations, and prioritize corrective action.

b. Ergonomic Hazard Prevention and Control

(1) Hazard Prevention and Control. Effective design or redesign of a task or workstation is the preferred method of preventing and controlling harmful stresses.

(2) The methods of intervention (in order of priority) to be used are: process elimination, engineering controls; substitution, work practices, and administrative controls; e.g., adjustment of work-rest cycles, slowing work pace, task rotation.

(3) The Department of Defense does not recognize back support belts or wrist splints as personal protective equipment, or support the use of these devices in the prevention of back or wrist injuries. These devices are considered medical appliances and may be prescribed by a credentialed health care provider who will assume responsibility for medical clearance, monitoring and proper fit.

(4) When appropriate, musculoskeletal hazards shall be assigned a Risk Assessment Code (RAC) using the safety RAC scoring system, and entered into the installation hazard abatement plan.

c. Purchasing and Facility Modification. All new equipment and tooling purchased will be reviewed for ergonomic design criteria by the CEC. Requests for tool evaluation will be forwarded to CEC. Facility design and modification drawings and specifications will be reviewed by the CEC.

d. Medical Support. Employees having suspected WMSD complaints will report to the Naval Hospital OHC for assessment. The Clinic will contact the CEC for task analysis and corrective actions. Documentation of the analysis will be provided to the medical staff. The clinic will provide early physical recognition as appropriate, along with evaluation, treatment,

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light or restricted duty, and follow-up for employees with work-related musculoskeletal disorders. Private medical providers will be provided written assessments upon request.

e. Training. A viable and successful Ergonomic Program is dependent on the training and WMSD awareness of its personnel. All personnel will be provided training and, upon completion, will be able to recognize WMSDs and corrective measures. Initial awareness training will be 2 hours long and will be entered in the employees' permanent record. Retraining will be conducted if a change in workstation or reassignment occurs.

f. Program Evaluation. The CEC will conduct an annual evaluation to assess the implementation progress and the effectiveness of the program.

### Definitions

**Abate:** To eliminate or reduce a hazard.

**Abatement:** The act of abating, or the state of being abated; a lessening, decrease, or reduction; removal or putting an end to; as, the abatement of an ergonomic hazard.

**Accident:** An unplanned event or series of events resulting in death, injury, occupational illness, or damage to or loss of equipment or property, or damage to the environment.

**Administrative Control:** Procedures and methods, set up by the employer, that significantly reduce exposure to risk factors by altering the way in which work is performed; examples include employee rotation, job task enlargement, and adjustment of work pace. Administrative controls should not be solely implemented to control ergonomic hazards.

**Awkward Posture:** Awkward posture is associated with an increased risk for injury. It is generally considered that the more a joint deviates from the neutral (natural) position, the greater the risk of injury.

**Cumulative Trauma Disorders:** Cumulative trauma disorders or CTDs (also termed repetitive motion injuries or RMI's), are disorders of the musculoskeletal and nervous systems that may be caused or aggravated by repetitive motions, forceful exertions, vibration, mechanical compression, sustained or awkward postures, all occurring over extended periods of time.

**DoD Personnel (Civilian On-Duty):** Civil Service employees of the DoD (including Reserve Component, and Reserve technicians, unless in a military duty status); nonappropriated fund employees (excluding military personnel working part-time to avoid dual reporting); Corps of Engineers Civil Works employees, Youth or Student Assistance Program employees' foreign nationals employed by the DoD Components; Navy Civil Service Mariners with the Military Sealift Command, and Army-Air Force Exchange Service employees, Active Duty, Reserve or National Guard personnel on active duty or performing inactive duty training, Service Academy cadets, Officer

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Candidates in Officer Candidates School and AOCS, Reserve Officer Training Corps cadets when engaged in directed training activities, and foreign national military personnel assigned to the DoD Components.

**Engineering Control:** Physical changes to jobs that control exposure to risk. Engineering controls act on the source of the hazard and control employee exposure to the hazard without relying on the employee to take self-protective action or intervention. Examples include: changing the handle angle of a tool, using a lighter weight part, providing a chair that has adjustability, task lighting, etc.

**Ergonomics:** The field of study that seeks to fit the job to the person, rather than the person to the job. Includes the evaluation and design of workplaces, environments, jobs, tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace

**Ergonomic Design:** The applied science of equipment design, as for the workplace, intended to maximize productivity by reducing operator fatigue and discomfort.

**Ergonomic Furnishings:** A piece of equipment necessary or useful for comfort or convenience, e.g. furniture, appliances, and other movable articles in a office, shop, motor vehicle etc.

**Ergonomic Program:** A systematic method of preventing, evaluating, and managing work-related Musculoskeletal disorders. The four elements of the ergonomics program described in this guideline are:

- worksite analysis
- hazard prevention and control
- medical management
- training and education

**Hazard:** Any real or potential condition that can cause injury, illness, or death to personnel or damage to or loss of equipment or property, mission degradation, or damage to the environment.

**Human Engineering:** A term synonymous with 'ergonomics' is the branch of this science that began in the United States and focuses on cognitive performance of humans.

**Inspection:** The process of determining compliance with safety and health standards through physical surveys of workplaces, operations, and facilities.

**Manual Material Handling:** Lifting, carrying, and moving materials without a mechanical aide.

**Musculoskeletal Disorders (MSD):** Injuries and disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal disc. Examples include carpal tunnel syndrome, rotator cuff tendonitis, and tension neck syndrome.

**OSHA:** Occupational Safety and Health Administration. The mission of the Occupational Safety and Health Administration (OSHA) is to save lives, prevent injuries and protect the health of America's workers. To accomplish this, federal and state governments must work in partnership with more than 100 million working persons and their six and a half million employers who are covered by the Occupational Safety and Health Act of 1970.

**Process Elimination:** Analysis of an ergonomic problem into alternative possibilities followed by the systematic elimination of unacceptable alternatives.

**Risk Assessment:** A structured process to identify and assess hazards. An expression of potential harm, described in terms of hazard severity, accident probability, and exposure to hazard.

**Risk Assessment Code (RAC):** An expression of the risk associated with a hazard that combines the hazard severity and accident probability into a single Arabic numeral.

**Segmental Vibration (Hand-Arm Vibration):** Vibration applied to the hand/arms through a tool or piece of equipment. This can cause a reduction in blood flow to the hands/fingers (Raynaud's disease or vibration white finger). It can also interfere with sensory receptor feedback leading to increased handgrip force to hold the tool. Further, a strong association has been reported between carpal tunnel syndrome and segmental vibration.

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**Workplaces:** Non-military-unique workplaces and operations: DoD military and civilian workplaces and operations that are comparable generally to those of the private sector. Examples include: facilities involved and work performed in construction; supply services; civil engineer or public works; medical service; and office work.

**Workplace Risk Factors (Ergonomics):** Actions in the workplace, workplace conditions, or a combination thereof, which may cause or aggravate a pre-existing or work-related musculoskeletal disorder. Workplace risk factors include, but are not limited to: repetitive, forceful or prolonged exertions; frequent or heavy lifting; pushing, pulling, or carrying of heavy objects; a fixed or awkward work posture; contact stress; localized or whole-body vibrations; cold temperature; and poor lighting. These workplace risk factors can be intensified by work organization characteristics such as: inadequate work-rest cycles; excessive work pace and/or duration, unaccustomed work; lack of task variability; machine work; and piece rate.

**Work-Related Musculoskeletal Disorder (Ergonomic):** An injury or illness of the muscles, tendons, ligaments, peripheral nerves, joints, cartilage (including intervertebral discs), bones and/or supporting blood vessels in either the upper or lower extremities, back or neck, that is associated with workplace musculoskeletal risk factors and include but are not limited to: cumulative trauma disorders; repetitive strain injuries or illnesses; repetitive motion injuries or illnesses; and repetitive stress injuries or illnesses. Refers collectively to signs, persistent symptoms, or clinically diagnosed work-related musculoskeletal disorders when they are caused or aggravated by exposure to workplace risk factors.